

**ENVIRONMENTAL SERVICES
SPB05-894P-C**

NORTHERN ANALYTICAL LABORATORIES INC.

**ATTACHMENT B
COST PROPOSAL**

Section 5: Cost Proposal

Northern has extensive experience in the field of laboratory analysis. As a result of this experience, we have been invited to competitively bid on projects for our clients. This competitive bidding process provides Northern with practical experience in determining the actual cost of performing high quality laboratory work within the limits of a free market system. Based on this experience, we have prepared our fee proposal and enclosed it herein as Attachment A1.

Should MDEQ request Northern to use subcontractors to provide analyses that are not available from our laboratory, Northern will negotiate with MDEQ to obtain the services required and charge reasonable fees for those services.

Attachment A1 - Water Samples / Special Services

Parameter*	Lab Preferred Method EPA/Stand. Meth./USGS	All values in ug/L unless noted				Cost
		Reporting Value from WQB-7, 12/2002	Instrument Limit (IDL)	Method Limit (MDL)	Practical Quant. Limit (PQL)	
Chlorophyll a, corrected for pheophytin	SM 10200H			2.3	5	\$50.00
PCBs	EPA 608	Varies	N/A	0.03	1	\$120.00
SVOA	EPA 625	Varies	N/A	0.3 to 30	10 to 50	\$350.00
SVOA	EPA 525.2	Varies	N/A	0.01 to 0.5	0.01 to 0.6	\$200.00
VOA	EPA 624	Varies	N/A	0.1 to 1.3	1 to 10	\$150.00
VOA	EPA 524.2	Varies	N/A	0.1 to 0.7	0.5 to 5	\$125.00

*Note that parameter names listed herein do not necessarily represent the acceptable Characteristic name for STORET deliverables, but may be a common grouping of constituents. Please refer to the appropriate attachment for EDD file specifications.

Attachment A1 - Water Samples / Inorganics

All values in ug/L unless noted										
Parameter*	Lab Preferred Method EPA/Stand. Meth./USGS	Reporting Value from WQB-7, 12/2002	Instrument Limit (IDL)	Method Limit (MDL)	Practical Quant. Limit (PQL)	Cost				
Acidity	EPA 305.1		--	1700	2000	\$8.50				
Alkalinity	SM 2320B		--	1000	1000	\$8.50				
Ammonia, as N	EPA 350.1	50 (mg/l)	--	0.02 (mg/l)	0.05 (mg/l)	\$15.00				
BOD	EPA 405.1		--	--	3000	\$30.00				
Bromide	EPA 320.1		--	None	5000	\$30.00				
Cation/Anion Balance	SM 1030F		--	--	--	---				
Chloride	EPA 325.3		--	500	1000	\$8.50				
Chlorine, Total Residual	Field					---				
Chromium VI	SM 3500-Cr-D	5	--	None	5	\$50.00				
COD	EPA 410.1 / 410.2		--	1900	5000	\$25.00				
Color	SM 2120B	5 (ADMI value)	--	--	5 Color Units	\$50.00				
Cyanide	SM 4500-CN-E	5	--	4	5	\$20.00				
Cyanide, Available						---				
Dissolved Organic Carbon						---				
Dissolved Gases						---				
Dissolved Oxygen	Field					---				
Fluoride	SM 4500-F-C	100	--	50	100	\$8.50				
Hardness, as CaCO3	SM 2340B		--	--	7000	17.00				
Hydrogen Sulfide	EPA 376.1		--	None	4000	20.00				
Nitrate, as N	EPA 353.2	10	--	2	10	20.00				
Nitrate/Nitrite as N	EPA 353.2	10	--	2	10	\$8.50				
Nitrite, as N	EPA 353.2	10	--	5	10	11.50				
Nitrogen, Total Persulfate		10				---				
Oil & Grease	EPA 1664		--	4000	10,000	\$50.00				
Organic Nitrogen	EPA 351.3			100	200	\$35.00				
Orthophosphate, as P (SRP)	EPA 365.2	1	--	0.7	1	\$15.00				
pH	EPA 150.1		--	--	1-13 S.U.	\$5.00				
Phosphorus - Total	EPA 365.2		--	4	10	\$15.00				
Sodium Absorbion Ratio	EPA 200.7 / 200.8		--	--	200	\$25.50				
Specific Conductance	SM 2510B		--	0.4 umhos/cm	10 umhos/cm	\$5.00				

Sulfate	EPA 375.2		--	2400	5000	\$8.50
Sulfide	EPA 376.1		--	None	4000	\$15.00
Sulfite	EPA 377.1		--	None	4000	\$30.00
Surfactants	EPA 425.1		--	None	200	\$50.00
Temperature	Field					---
Total Dissolved Solids (TDS)	EPA 160.1		--	4900	20,000	\$8.50
Total Inorganic carbon	SM 2320B		--	1000	1000	\$8.50
Total Organic Carbon						---
Total Settleable Solids	EPA 160.5		--	--	0.1 ml/L	\$10.50
Total Solids	EPA 160.1		--	4900	20,000	\$8.50
Total Suspended Sediment			--			---
Total Suspended Solids	EPA 160.2		--	300	1000	\$8.50
Total Volatile Solids	EPA 160.4		---	4900	20,000	\$15.00
Turbidity	EPA 180.1	1 NTU	--	0.04 NTU	0.2 NTU	\$10.00

*Note that parameter names listed herein do not necessarily represent the acceptable Characteristic name for STORET deliverables. For example, the STORET/SIM format may require a separate field for the sample fraction, "Total". Please refer to the appropriate attachment for EDD file specifications.

Attachment A1 - Water Samples / Metals

Parameter*	Preferred Method EPA/Stand. Meth./USGS	Reporting Value from WQB-7, 12/2002	All limits in ug/L			
			Instrument Limit (IDL)	Method Limit (MDL)	Practical Quant. Limit (PQL - ug/L)	Cost
Laboratory Filtration	0.45 micron	N/A	N/A	N/A	N/A	\$10.00
Total Recoverable Digestion	EPA 200.2	N/A	N/A	N/A	N/A	\$8.50
Aluminum, Dissolved	EPA 200.7 / 200.8	100	0.06	30 / 0.07	100	\$8.50
Antimony, Total Rec.	EPA 200.8	6	0.01	0.1	3	\$8.50
Arsenic, Total Rec.	EPA 200.8 / 206.3	18	0.05	0.1 / none	3	\$8.50
Barium, Total Rec.	EPA 200.7 / 200.8		0.01	1 / 0.1 -	20	\$8.50
Beryllium, Total Rec.	EPA 200.8	4	0.01	0.03	1	\$8.50
Boron, Total Rec.	EPA 200.7		--	7	100	\$8.50
Cadmium, Total Rec.	EPA 200.8	0.1	0.007	0.01	0.1	\$8.50
Calcium, Total Rec.	EPA 200.7 / 200.8		2	20 / 27	1000	\$8.50
Chromium, Total Rec.	EPA 200.8	1	0.07	0.03	1	\$8.50
Cobalt, Total Rec.	EPA 200.8		0.02	0.07	2	\$8.50
Copper, Total Rec.	EPA 200.8	1	0.03	0.09	1	\$8.50
Iron, Total Rec.	EPA 200.7	10	--	7	10	\$8.50
Lead, Total Rec.	EPA 200.8	3	0.003	0.06	3	\$8.50
Magnesium, Total Rec.	EPA 200.7 / 200.8		0.1	30 / 1	1000	\$8.50
Manganese, Total Rec.	EPA 200.7 / 200.8	5	0.007	1 / 0.04	5	\$8.50
Mercury, Total Rec.	EPA 245.1	0.05	--	0.1	0.2	\$15.00
Molybdenum, Total Rec.	EPA 200.8		0.01	0.06	50	\$8.50
Nickel, Total Rec.	EPA 200.8	20	0.8	0.8	20	\$8.50
Potassium, Total Rec.	EPA 200.7 / 200.8		5	30 / 6	1000	\$8.50
Selenium, Total Rec.	EPA 200.8 / 270.3	1	0.2	0.1 / 0.6	1	\$8.50
Silver, Total Rec.	EPA 200.8	3	0.03	0.04	3	\$8.50
Sodium, Total Rec.	EPA 200.7 / 200.8		0.3	30 / 18	1000	\$8.50
Strontium, Total Rec.	EPA 200.8		None	None	50	\$15.00
Thallium, Total Rec.	EPA 200.8	3	0.006	0.06	1	\$8.50
Tin, Total Rec.	EPA 200.8		None	None	50	\$15.00
Titanium, Total Rec.	EPA 200.7		--	5	50	\$15.00
Vanadium, Total Rec.	EPA 200.8		0.02	0.01	50	\$8.50
Zinc, Total Rec.	EPA 200.7 / 200.8	10	0.4	2 / 0.7	10	\$8.50

*Note that parameter names listed herein do not necessarily represent the acceptable Characteristic name for STORET deliverables. For example, the STORET/SIM format may require a separate field for the sample fraction, "Total". Please refer to the appropriate attachment for EDD file specifications.

Attachment A1 - Water Samples / Radiochemistry

Parameter*	Preferred Method EPA/Stand. Meth./USGS	All limits in pCi/L				Cost
		Reporting Value from 40CFR 141.26	Instrument Limit (IDL)	Method Limit (MDL)*	Practical Quant. Limit (PQL)*	
Gross a&b						---
Alpha emitters		3				---
Beta/photom emitters		4				---
Cesium-134		10				---
Gamma emitters						---
Iodine-131		1				---
Lead-210						---
Polonium-210						---
Radium 226		1				---
Radium 228		1				---
Ra226/228 Combined						---
Radon 222						---
Strontium-89		10				---
Strontium-90		2				---
Tritium						---
Uranium						---

*Note that parameter names listed herein do not necessarily represent the acceptable Characteristic name for STORET deliverable. Please refer to the appropriate attachment for EDD file specifications.

* The NPS Program does not require a great deal of radiochemistry testing but it does come up from time to time (e.g., contractors may use Tritium as a tracer to track groundwater flow patterns.)

This category is special services and covers the potential that surface and groundwaters may, at some point, require the radiochemistry components of DEQ publication WQB-7 and the National Primary Drinking Water standards in 40 CFR Part 141.15 and 141.16. Indication of methods available, ability to meet NPDW Standards (yes/no) and prices charged would satisfy this table.

Attachment A1 - Sediment Samples

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Parameter*		Lab Preferred Method EPA/Stand. Meth./USGS	All values in mg/kg unless noted				Cost
			Reporting Value from WQB-7, 12/2002	Instrument Limit (IDL)	Method Limit (MDL)	Practical Quant. Limit (PQL)	
Total Metals Digestion		EPA 3050B		--	--	--	\$8.50
Aluminum		EPA 6010B		--	18	50	\$8.50
Antimony		EPA 6010B		--	2	5	\$8.50
Arsenic		EPA 6010B		--	3	10	\$8.50
Barium		EPA 6010B		--	0.4	5	\$8.50
Beryllium		EPA 6010B		--	0.3	2	\$8.50
Boron		EPA 6010B		--	1	10	\$8.50
Cadmium		EPA 6010B		--	0.3	2	\$8.50
Calcium		EPA 6010B		--	4	100	\$8.50
Chromium		EPA 6010B		--	0.6	2	\$8.50
Cobalt		EPA 6010B		--	0.4	5	\$8.50
Copper		EPA 6010B		--	4	10	\$8.50
Iron		EPA 6010B		--	20	50	\$8.50
Lead		EPA 6010B		--	1	10	\$8.50
Magnesium		EPA 6010B		--	3	100	\$8.50
Manganese		EPA 6010B		--	0.4	2	\$8.50
Mercury		EPA 7471B		--	0.005	0.1	\$15.00
Molybdenum		EPA 6010B		--	0.7	5	\$8.50
Nickel		EPA 6010B		--	0.5	5	\$8.50
Potassium		EPA 6010B		--	2	100	\$8.50
Selenium		EPA 6010B		--	4	10	\$8.50
Silver		EPA 6010B		--	0.8	5	\$8.50
Sodium		EPA 6010B		--	4	100	\$8.50
Strontium		EPA 6010B		--	None	10	\$15.00
Thallium		EPA 6010B		--	4	10	\$8.50
Tin		EPA 6010B		--	None	10	\$15.00
Titanium		EPA 6010B		--	1	10	\$15.00
Vanadium		EPA 6010B		--	0.6	5	\$8.50
Zinc		EPA 6010B		--	0.6	2	\$8.50

For example, the STOPET/SIM format may

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APPENDIX D: PRICE SHEETS

CONTRACTOR PRICE SHEET

CONTRACTOR NAME: NORTHERN ANALYTICAL LABORATORIES, INC.		
PERSONNEL	NAMES	RATE (\$/HOUR)
Principal	KATHLEEN SMIT	\$110.00
Senior hydrologist		
Project engineer/hydrologist		
Project manager	KATHLEEN SMIT, SARA SANDERSON	\$75.00
Licensed engineer (P.E.)		
Licensed surveyor		
Surveyor		
Survey crew – GPS (sub centimeter grade)		
Survey crew – Total station		
Technical draft person (CAD)		
Fisheries biologist		
Vegetation specialist/wetland ecologist		
Technicians - construction		
- hydrology		
- environmental		
- vegetation		
- other (specify)		
Laborer - construction		
- hydrology		
- environmental		
- vegetation		
- other (specify)		
Senior Clerical	N/A	
Clerical	N/A	
Attendance at meetings	N/A	(% of personnel rate)
EQUIPMENT	Cost/hour with prevailing wage rates	
Four wheel ATV		
Snowmobile		
Boat (2-3 person non-powered)		
Boat (powered)		
TRAVEL	STATE RATE	
Mileage (standard auto)	0.345	(cost/mile)
Mileage (heavy duty)		(cost/mile)
Lodging	Reasonable Costs	(cost/day)
Meals	\$23.00/day	(cost/day)
Hourly rate during travel	N/A	(% of personnel rate)